

Brief Description of the Drawings

A more complete understanding of the invention may be attained by reference to the drawings, in which:

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FIGURE 1 depicts an exemplary storage area network (SAN) management environment according to the invention;

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FIGURE 2 is another schematic view of a SAN management environment according to the invention having a manager and two consoles that allow an operator to interact with the manager;

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FIGURE 3 schematically depicts functional components of an exemplary manager in a SAN management environment of the invention and those of an agent residing on a host connected to the SAN;

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FIGURE 4 schematically depicts that a manager and an agent residing on a host in a SAN according to the invention can run on different platforms and are in communication with one another;

FIGURE 5 lists various services provided by an exemplary embodiment of a manager in a SAN in accord with the teachings of the invention;

FIGURE 6 is a diagram illustrating a number of modules of a SAN manager of the invention and their architectural interconnectivity;

FIGURE 7A schematically depicts the functionality provided by a policy engine of a SAN
5 manager of the invention for extending the file system of host connected to the SAN;

FIGURE 7B schematically illustrates processing of events by the policy engine of FIGURE 7A;

FIGURE 8 is a diagram illustrating various modules for implementing LUN management
10 services in a SAN manager according to the teachings of the invention;

FIGURE 9 schematically illustrates that scanners running on hosts connected to a SAN of the invention can utilize SCSI protocol to query storage devices attached to the SAN;

FIGURE 10 is a diagram illustrating a number of modules in a SAN of the invention that
15 implement LUN ID generation and LUN masking;

FIGURE 11 is a diagram illustrating various modules of a SAN of the invention and the interactions among them for implementing file system extension services;

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FIGURE 12 illustrate three objects in a SAN management environment of the invention including persistable data and related to one another via an inheritance tree;

FIGURE 13 schematically depicts a method of the invention for mapping the persistable data contained in the objects of FIGURE 12 onto a relational database;

FIGURE 14 is a flow chart that describes the method of FIGURE 13 in more detail;

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FIGURE 15 illustrates that a SAN manager of the invention can communicate with a GUI server by utilizing an object request broker (ORB) over a TCP/IP connection;

FIGURE 16 illustrates an exemplary display for displaying one or more storage devices connected to the SAN of the invention and presenting information regarding selected attributes thereof;

FIGURE 17 illustrates a display in accord with the teachings of the invention displaying a containment tree hierarchy including a storage device, a LUN contained in the storage device, and selected properties of the LUN;

FIGURE 18 illustrates an exemplary display presented by a GUI in a SAN of the invention displaying a list of hosts connected to the SAN and LUNs accessible to a host selected from the list;

FIGURE 19 illustrates the use of a GUI in a SAN of the invention for assigning a LUN to a host;